

WHAT IS CLAIMED IS:

1. A cutting tool assembly, said assembly comprising:

5 a cutting bit having a head and a cylindrical shank portion of substantially constant outer diameter extending from said head, said shank portion including an annularly recessed groove;

10 a bit holder including a generally cylindrical bore for receiving said cylindrical shank portion of said cutting bit;

15 said cutting tool assembly further including a retainer sleeve disposed between said shank portion of said cutting bit and said bore of said bit holder and closely conforming about said shank portion while allowing said shank portion to rotate within said bore, said retainer including at least one stop tab received in said shank recessed groove to retain said cutting bit within said bore of said bit holder and to prevent axial removal of said cutting bit when in use while  
20 allowing rotatable movement of said cutting bit within said bore.

2. A cutting tool assembly as set forth in claim 1 wherein said at least one stop tab is folded over.

25 3. A cutting tool assembly as set forth in claim 1 wherein said generally cylindrical bore includes a notch corresponding to and disposed opposite said annularly recessed groove;

30 said retainer having at least one dimple protruding radially outward from an exterior surface of said retainer;

wherein said at least one dimple cooperates with said notch to fix said retainer within said bore of the bit holder.

FOOTNOTES SHEET 2

4. A cutting tool assembly as set forth in claim 1 wherein said retainer sleeve includes at least one stop tab D-shape opening associated with said at least one stop tab.

5. A cutting tool assembly as set forth in claim 4 wherein said annularly recessed groove is bounded by a pair of annular edge surfaces which extend between said groove and said outer diameter of said shank portion.

6. A cutting tool assembly as set forth in claim 1 wherein said head of said cutting bit includes an annular shoulder disposed on one side of said head, a wear washer is positioned about the shank of the cutting bit between said shoulder and a front face of the bit holder; said annular shoulder having a diameter larger than said wear washer providing an access area disposed between said annular shoulder and said front face of said bit holder for receiving a removal tool.

7. A cutting tool assembly as set forth in claim 1 wherein said cutting bit further includes a neck merging between said annular shoulder and said shank portion, said cylindrical bore including a flared mouth at a receiving end thereof.

8. A cutting tool assembly, said assembly comprising:

a retainer sleeve including a stop tab to prevent axial removal of a cutting bit while allowing rotational movement of said cutting bit during cutting operations;

wherein said stop tab is folded over.

9. A cutting tool assembly according to claim 8, wherein said retainer sleeve includes at least one stop tab opening adjacent said at least one stop tab.

10. A cutting tool assembly according to claim 9, wherein the at least one stop tab includes a tip;

5 said stop tab is folded over so that said tip extends beyond said opening.

11. A cutting tool assembly according to claim 10, wherein said tip extends beyond said opening by at least 1/16 inch.

10 12. A cutting tool assembly according to claim 9, wherein said opening is D-shaped.

13. A cutting tool assembly according to claim 11 wherein said D-shaped opening has rounded edges and no sharp corners.

15 14. A cutting tool assembly according to claim 10 wherein said retainer is split and is made from a spring steel.

15. A cutting tool assembly, said assembly comprising:

20 a retainer sleeve including an outward dimple wherein said dimple has at least one radially outward projecting dimple;

wherein said retainer has a cylindrical circumference and a thickness dimension,

25 the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is about 15-30 percent of the thickness dimension of said retainer.

30 16. A cutting tool assembly according to claim 15, wherein said retainer sleeve includes a plurality of said dimples spaced relative to one another about the circumference of said retainer sleeve.

Sub A2

Sub B3

Sub  
B3

17. A cutting tool assembly according to claim 15, wherein said dimples are generally semi-spherical.

18. A retainer, said retainer comprising:  
5 a stop tab to prevent axial removal of a cutting bit while allowing rotational movement of said cutting bit during cutting operations;  
wherein said stop tab is folded over.

19. A retainer according to claim 18,  
10 wherein said retainer sleeve includes at least one stop tab opening adjacent said at least one stop tab.

20. A cutting tool assembly according to claim 19, wherein the at least one stop tab includes a tip;

15 said stop tab is folded over so that said tip extends beyond said opening.

21. A retainer according to claim 20, wherein said tip extends beyond said opening by at least 1/16 inch.

22. A retainer according to claim 19, wherein said opening is D-shaped.

23. A retainer according to claim 21 wherein said D-shaped opening has rounded edges and no sharp corners.

24. A cutting tool assembly, said assembly comprising:

25 a cutting bit having a head and a cylindrical shank portion of substantially constant outer diameter extending from said head, said shank portion including  
30 an annularly recessed groove;

a bit holder including a generally cylindrical bore for receiving said cylindrical shank portion of said cutting bit;

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said cutting tool assembly further including a retainer sleeve disposed between said shank portion of said cutting bit and said bore of said bit holder and closely conforming about said shank portion while allowing said shank portion to rotate within said bore, said retainer including at least one stop tab received in said shank recessed groove to retain said cutting bit within said bore of said bit holder and to prevent axial removal of said cutting bit when in use while allowing rotatable movement of said cutting bit within said bore; said at least one stop tab is folded over; wherein said annularly recessed groove has two annular edge surfaces; and

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15      bendtop;
      said at least one stop tab has a tip and

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whereby an outward most position of the cutting bit is limited by cooperation between said tip and an outward facing edge surface of said two annular edge surfaces.

20            25. A cutting tool assembly according to  
claim 24 wherein a inwardmost position of said cutting  
bit is limited by contact of said bendtop with an  
opposite inward facing annular edge surface of said two  
annular edge surfaces.

25                    26. A cutting tool assembly according to  
claim 24 wherein a inwardmost position of said cutting  
bit is limited by contact of an endface of said  
retainer with an inward facing annular neck surface.

27. A cutting tool assembly according to  
claim 26 wherein said bendtop is adjacent an opposite  
inward facing annular edge surface of said two annular  
edge surfaces;

whereby as said endface and annular neck surface wear down during the operational use of said cutting tool assembly, inward axial play increases and

said opposite inward facing annular edge surface begins to additionally contact said bendtop.

28. A cutting tool assembly as set forth in claim 24 wherein said generally cylindrical bore includes a notch corresponding to and disposed opposite said annularly recessed groove;

said retainer having at least one dimple protruding radially outward from the exterior surface of said retainer;

wherein said at least one dimple cooperates with said notch to fix said retainer within said bore of the bit holder.

29. A retainer, said retainer comprising: a retainer sleeve including an outward dimple wherein said dimple has at least one radially outward projecting dimple;

wherein said retainer has a cylindrical circumference and a thickness dimension,

the amount of radial projection of said dimple beyond the cylindrical surface of the retainer is about 15-30 percent of the thickness dimension of said retainer.

30. A retainer according to claim 29, wherein said retainer sleeve includes a plurality of said dimples equally spaced relative to one another about the circumference of said retainer sleeve.

31. A retainer according to claim 29 further comprising:

a stop tab to prevent axial removal of a cutting bit while allowing rotational movement of said cutting bit during cutting operations;

wherein said stop tab is folded over.

FOOTNOTES

Sub A3

Sub B3

Sub A1

Sub B3